

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA**

Civil Action No.: 7:23-CV-00897

**IN RE: CAMP LEJEUNE WATER
LITIGATION**

This Pleading Relates to:

ALL CASES.

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**PLAINTIFFS' LEADERSHIP
GROUP'S OPPOSITION TO
UNITED STATES' MOTION TO
EXCLUDE EXPERT TESTIMONY
OF MUSTAFA ARAL**

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. FACTUAL BACKGROUND.....	2
III. LEGAL STANDARD.....	3
IV. ARGUMENT	4
A. Defendant fails to present <i>any</i> evidence that environmental engineers such as Dr. Aral do not reasonably rely on data collected by other engineering professionals.	4
B. Defendant invents a standard for expert “fit” that its own experts could not satisfy.	9
V. CONCLUSION.....	14
CERTIFICATE OF SERVICE	16

I. INTRODUCTION

Plaintiffs' Leadership Group ("PLG") submits this Opposition to the United States' Motion to Exclude Unreliable and Irrelevant Expert Testimony of Mustafa Aral. The United States asks this Court to believe that Dr. Aral, an internationally renowned environmental engineer who spent a decade working on the historical water modeling of Camp Lejeune's contaminated water systems—alongside and at the request of Defendant's own expert environmental agency, ATSDR—could not utter one helpful word about the quality of their joint work to this Court at trial. In its Motion, the United States glosses over Dr. Aral's ten years of work on Camp Lejeune, recasts his substantial contributions to ten chapters of ATSDR's peer-reviewed, published reports as having been "limited," and tells this Court he now has nothing "helpful" to say at the forthcoming trials.

In his years working with ATSDR on historical water modeling for Tawara Terrace and Hadnot Point, Dr. Aral had significant involvement in many aspects of both projects. Nevertheless, as to be expected with such large-scale engineering projects, he did not touch every single aspect of the agency's work spanning this time—or even every aspect of data collection for the chapters he did author. That fact does not render him unable to testify about ATSDR's overall work under Federal Rule of Evidence 703. Were it so, Defendant's *own* experts would lack any basis to opine on ATSDR's work because they, too, were "not involved in collecting data that the ATSDR used in all relevant steps of the water modeling projects at Camp Lejeune..." Def.'s Mot. at 12. Further, under Defendant's argument—that Dr. Aral's testimony is irrelevant because he is not an epidemiologist who can opine on the sufficiency of the water modeling data—no expert in this case would be able to testify unless he or she could testify across all of the sciences, connecting A to Z. Rule 702 and its caselaw impose no such requirement; in fact, courts around the country have rejected that exact notion.

As set forth below, Dr. Aral's substantial contributions to the water modeling conducted alongside ATSDR for ten years at Camp Lejeune surely qualify as sufficient facts and data under Rule 702 to opine on the quality of the work produced. And Defendant's argument that Dr. Aral's

testimony is irrelevant because he “knows nothing about the level of exposure detail needed for the epidemiological studies” should likewise be rejected. Def.’s Mot. at 12. Plaintiff’s other causation experts can and will address the sufficiency of the contaminant data required to find causation. For these reasons, this Court should deny Defendant’s misplaced Motion to Exclude.

II. FACTUAL BACKGROUND

Mustafa Aral Ph.D., P.E., is a Professor Emeritus of Civil and Environmental Engineering at the Georgia Institute of Technology and an independent consultant. Ex. 1, Report at 3. Dr. Aral has more than 50 years of professional experience in environmental modeling and forensic analysis, including the development and application of mathematical model techniques to assess the origin, fate, and transport of contaminants in natural and engineered environments. *Id.* He has conducted environmental forensic evaluations of chemical release timing and developed enviro-geochemical models within multimedia systems in compliance with regulatory guidance and directives. *Id.*

Dr. Aral holds a Ph.D. in Environmental Water Resources Management and Modeling (1971) and a Master of Science in Water Resources Engineering (1969)—both from the Georgia Institute of Technology. *Id.* He earned his Bachelor of Science in Civil Engineering in 1967 from the Middle East Technical University in Ankara, Turkey. Over the course of his academic and professional career, Dr. Aral has authored more than 100 peer-reviewed technical publications, five books, ten book chapters, and numerous conference papers and technical reports. *Id.* Dr. Aral is a Fellow of the American Society of Civil Engineers (ASCE) and a Past President of the American Institute of Hydrology (AIH). *Id.* He founded the International Journal on Water Quality, Exposure and Health in 2009 and served as its Editor-in-Chief until 2014. *Id.*

Dr. Aral has received twenty-eight honor citations from scientific and professional organizations. *Id.* His awards include, *inter alia*, the ASCE Cuming Medal (2000), two American Academy of Environmental Engineers Best Environmental Health Research Awards (2003 and 2015), the Centers for Disease Control and Prevention (CDC) Excellence in Applied Environmental Health Research Award (2006), and the ASCE-EWRI James R. Croes Medal

(2011). *Id.* Notably, in 2015, Dr. Aral received the Grand Prize in Environmental Engineering Research from the American Academy of Environmental Engineers, based on his work in the historical reconstruction of the Camp Lejeune water contamination and modeling project. *Id.*

Here, based on his education, experience, and training, Dr. Aral offers several opinions, *see* Ex. 1, Report at 12–13, which include:

The models and techniques used by the ATSDR for historical reconstruction, including fundamental equations, input parameters, parameter estimates, calibration, uncertainty and sensitivity analyses, were and remain reliable, scientifically valid and state of the art procedures that are consistent with standard practices used and are generally accepted in this field.

The simulated monthly mean concentrations of TCE, PCE, 1,2-tDCE, benzene and vinyl chloride at Tarawa Terrace, Hadnot Point and Holcomb Boulevard included (tabulated or in figures) in ATSDR reports are reliable and represent, within a reasonable degree of scientific and engineering certainty, the contaminant levels in finished water at Camp Lejeune from 1953 to 1987

The analyses published in all ATSDR chapter reports (ATSDR, 2007; ATSDR, 2013) and supplemental information regarding Camp Lejeune (see Figure 2), including the conclusions and monthly concentration data, were all done applying proper scientific and engineering methodologies and remain to this day to be mathematically reliable, statistically accurate and correct.

Id.

III. LEGAL STANDARD

Federal Rule of Evidence 702 permits a qualified expert to testify if their knowledge will assist the trier of fact, the testimony is grounded in sufficient facts or data, that testimony is the product of reliable principles and methods, and those principles and methods have been reliably applied to the case. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 588 (1993). Evidence is relevant if “it has any tendency to make a fact more or less probable than it would be without the evidence” and “the fact is of consequence in determining the action.” Fed. R. Evid. 401. And the “basic standard of relevance ... is a liberal one.” *Daubert*, 509 U.S. at 587.

Federal Rule of Evidence 703 permits an expert to opine regarding data that he has not personally observed. (“An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed.”). Moreover, “[i]f experts in the particular field

would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted.” *Id.*

IV. ARGUMENT

A. Defendant fails to present *any* evidence that environmental engineers such as Dr. Aral do not reasonably rely on data collected by other engineering professionals.

Defendant argues that, because Dr. Aral “was not involved in collecting data that the ATSDR used in all relevant steps of the water modeling projects at Camp Lejeune,” he cannot opine on the reliability of ATSDR’s work, and thus he must be “parroting” ATSDR’s work as well as other experts (who are not identified by Defendant). Def.’s Mot. at 12. In support, Defendant cherry-picks irrelevant deposition questions concerning ATSDR’s work—which spanned more than a decade, involved dozens of government officials, and manifested in thousands of pages of reports—such as “why the ATSDR needed operational histories for the 96 supply wells in the Hadnot Point system, of which only a few were contaminated.” *Id.* Such a question has no bearing on whether ATSDR’s reports or Dr. Aral’s testimony were reliable; it may most charitably be characterized as an historical factoid.

And in reality, Defendant’s argument is, at heart, a question of whether Dr. Aral’s opinions comply with Federal Rule of Evidence 703, which permits an expert such as Dr. Aral to offer opinions based upon data that he has not personally observed. Defendant argues that because Dr. Aral didn’t personally observe, collect, or review all of the data in ATSDR’s reports, his opinion cannot satisfy Rule 702’s requirement that his opinions be based on “sufficient facts or data” and is inadmissible hearsay. But Rule 703 envisions, and permits, that exact scenario: “If experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted.” Fed. R. Evid. 703; *see also United States v. Vandivere*, No. 5:15-HC-2017-D, 2015 WL 13689051, at *1 (E.D.N.C. Dec. 14, 2015) (“Thus, the fact that Dr. Zinik may not have firsthand knowledge of information upon which he relied does not provide a basis for striking evidence of his opinions.”).

In *OmniSource Corp. v. Heat Wave Metal Processing, Inc.*, the plaintiff made a similar argument as Defendant here: that an expert's opinions "do not rely on sufficient facts or data connected to this case because he has not independently investigated the matter." No. 5:13-CV-772-D, 2015 WL 3452918, at *8 (E.D.N.C. May 29, 2015) (Dever, J.). This Court rejected that argument in observing that under Rule 703, if such information is a type reasonably relied upon by experts in the field, "[i]ndividual investigation is not necessarily required." *OmniSource Corp.*, 2015 WL 3452918, at *8. This Court held that such "concerns go to the weight of [the expert's] testimony and not to its admissibility." *Id.*; see also *Collins v. Cottrell Contracting Corp.*, 733 F. Supp. 2d 690, 701 (E.D.N.C. 2010) (Flanagan, J.) (finding expert physician's reliance on other physicians' records was reasonable under Rule 703); *Verona v. U.S. Bancorp.*, No. 7:09-CV-057-BR, 2011 WL 1252935, at *18 (E.D.N.C. Mar. 29, 2011) (stating that expert testimony is excludable if it is "speculative or conjectural," "based on assumptions that are so unrealistic and contradictory as to suggest bad faith," or an "apples and oranges comparison," but other contentions that the assumptions are unfounded go to the weight, not the admissibility, of the testimony) (internal quotations omitted).

Defendant completely fails to show that environmental engineers such as Dr. Aral do not regularly rely on data collected by other professionals when conducting their professional work. And the few cases that Defendant cites that it claims support exclusion are too far afield from the facts here. For example, Defendant cites *Funderburk v. S.C. Elec. & Gas Co.* for the proposition that expert testimony "that seeks merely to parrot other evidence or vouch for the work of another expert" is prohibited. 395 F. Supp. 3d 695, 717 (D.S.C. 2019). But a closer read of that decision reveals that the concerns meriting exclusion there are not applicable here. In *Funderburk*, as Defendant highlights, the court excluded an expert's testimony that "parroted manufacturer's hearsay on culvert life expectancy." Def.'s Mot. at 14. The court wrote what is reflected in Rule 703: "Generally, it is permissible for an expert to rely upon the opinions and findings of other experts to reach his or her expert conclusion, but only if experts in their respective field would reasonably rely on the other expert's opinions and findings." *Funderburk*, 395 F. Supp 3d at 717..

(internal quotations omitted). The court continued, “[i]n some instances, a proffered expert ... should address the validity of the opinions of the experts he relied upon and not just show an unblinking reliance upon the opinions of other experts.” *Id.* (citing *In re TMI Lit.*, 193 F.3d 613, 716 (3d Cir. 1999)). But the expert in *Funderburk* was excluded because he simply recited, verbatim, a blanket statement from the culvert manufacturer’s materials, and thus did nothing more than provide an “unblinking reliance” without conducting any analysis or testing himself. 395 F. Supp. 3d at 719. Critically, the sole reliance for his opinion about the life expectancy of a culvert was that statement from the manufacturer’s materials, and because that statement was not peer-reviewed or published, that fact “significantly undermin[ed] its reliability.” *Id.* at 718.¹

Defendant cites a bankruptcy case, *Matter of James Wilson Assocs.*, as additional, but again misplaced support for its argument. 965 F.2d 160, 173 (7th Cir. 1992). There, a party retained an expert architect who was to opine on the physical state of the building that was the subject of the bankruptcy. *Id.* The expert architect hired an engineer (who was not called as an expert witness) who personally inspected the building—while the architect never did. *Id.* The Seventh Circuit observed, again consistent with Rule 703, that “[a]n expert is of course permitted to testify to an opinion formed on the basis of information that is handed to rather than developed by him—information of which he lacks first-hand knowledge and which might not be admissible in evidence no matter by whom presented.” *Id.* at 172. But, importantly, the court wrote that “the judge must make sure that the expert isn’t being used as a vehicle for circumventing the rules of evidence.” *Id.* at 713. The Seventh Circuit found exactly that: “The issue was the state of the building, and the expert who had evaluated that state—the consulting engineer—was the one who should have

¹ Defendant cites another decision that quotes the *Funderburk* decision, *In re Zetia (Ezetimibe) Antitrust Litig.*, No. 2:18-MD-2836, 2022 WL 3337796, at *10 (E.D. Va. Aug. 3, 2022). Def.’s Mot. at 14. But in *In re Zetia*, the court actually permitted the at-issue expert’s testimony, and wrote that Rule 703 permits such reliance on another expert, as the court observed that “an expert is not required to reprove the other expert’s opinions.” 2022 WL 3337796, at *10 (emphasis in original). The court also wrote: “Furthermore, Federal Rules of Evidence 702 and 703 do not require that an expert rely upon the best evidence, and certainly not upon what the opposing party considers to be the best evidence.” *Id.* at *14 (citation omitted).

testified.” *Id.* The expert architect “could use what the engineer told him to offer an opinion within the architect's domain of expertise, but he could not testify for the purpose of vouching for the truth of what the engineer had told him—of becoming in short the engineer's spokesman.” *Id.* Thus, the Seventh Circuit concluded that such a maneuver is an improper “screen against cross-examination.” *Id.* Here, by contrast, Dr. Aral is not being used simply to introduce the data collected by ATSDR, but rather to offer an expert opinion based upon his review of that data.

In any event, Defendant has failed to show that Dr. Aral has a sole, “unblinking reliance” on anyone or that his testimony is being used to “screen” against cross-examination. Dr. Aral spent 10 years working on water modeling for Camp Lejeune and co-authored 10 chapters as part of ATSDR’s work. That is not the “unblinking reliance” on unpublished, un-peer-reviewed hearsay that the *Funderburk* court excluded. Dr. Aral *has* relied on the data collection of his fellow co-authors at ATSDR with whom he worked hand-in-hand for a decade to opine on the reliability of ATSDR’s work here. But that is quite different from what *Funderburk* says and what Defendant claims has happened here. Nor is Dr. Aral’s years-long work at Camp Lejeune akin to the architect in *James Wilson*, whose entire opinions amounted to vouching for the work of a non-testifying consultant engineer.

In scientific and engineering fields, often work is conducted as a team effort, with participants working on specialized aspects of a project, based on their particular expertise. Dr. Aral contributed directly to certain aspects of model development and specifically focused on the very complex field of three-dimensional multiphase flow and transport. This is common and standard practice in the groundwater field. Basic data collection can often be collected by technicians, and it is not economically feasible, practical, nor scientifically necessary for professors, scientists, and model developers to be intimately or directly involved in the collection of data used to support a model. And here, Dr. Aral is not opining that the underlying data collection was correct, but that based on his decades of experience in water modeling, the methods that ATSDR used to evaluate that data were sound—an opinion that is permissible under Rules 702 and 703. *See Vandivere*, 2015 WL 13689051, at *1 (“Thus, the fact that Dr. Zinik may not

have firsthand knowledge of information upon which he relied does not provide a basis for striking evidence of his opinions.”). Moreover, other experts who did participate in the data collection related to Camp Lejeune, such as Morris Maslia, are named as experts for Plaintiffs here and can testify to the methods and accuracy of that data collection.

Defendant’s questions regarding Dr. Aral’s knowledge of specific data related to the water modeling are matters for cross-examination rather than a basis for exclusion under *Daubert*. As this Court wrote in *OmniSource*, if an expert has reasonably relied upon data as other experts in the field would have, then the questions regarding the expert’s independent investigation “go to the weight of [the expert’s] testimony and not to its admissibility.” 2015 WL 3452918, at *8 (“*OmniSource* can cross-examine Kerlin at trial about the depth of his investigation, and the jury will decide how much weight to afford Kerlin’s testimony.”); *see also Verona*, 2011 WL 1252935, at *18 (stating that contentions that factual assumptions are unfounded go to the weight, not the admissibility, of the testimony).

Under Rules 702 and 703, Dr. Aral is clearly permitted to testify that based on his education, experience, and training, the “models and techniques used by ATSDR ... were and remain reliable, scientifically valid and state of the art procedures that are consistent with standard practices used and are generally accepted in this field,” that the calculated concentrations of the contaminants are reliable, and that the “analyses ... were all done applying proper scientific and engineering methodologies.” Ex. 1, Report at 12–13. As Dr. Aral wrote in his report: “The basis of my opinions outlined in this expert report is my 50 years of work in this field and my fifteen years of Camp Lejeune related work providing technical assistance to ATSDR under a cooperative agreement established between the Centers for Disease Control and Prevention (CDC) and Georgia Tech and my fifty years of expertise and knowledge in this area of research as an educator, researcher and engineer.” Ex. 1, Report at 13. Importantly, Dr. Aral, continued: “The documents and information that I considered are of the type that can be reasonably relied upon to support my opinions and are regularly relied upon by practitioners in my field.” *Id.* at 4. “The materials that I reviewed include, but are not limited to, published technical literature, reports, historic data

sources, correspondence and meetings with state and regulatory agencies, participation in workshops and review of documents provided by independent experts at these gatherings.” *Id.* Those statements remain unrebutted by Defendant, which has entirely failed to show that Dr. Aral has impermissibly relied on other engineering professionals to arrive at his opinions. The Court should thus reject Defendant’s argument.

B. Defendant invents a standard for expert “fit” that its own experts could not satisfy.

Defendant next argues that because Dr. Aral “knows nothing about the level of exposure detail needed for the epidemiological studies that the ATSDR’s water modeling projects were intended to support,” that his opinions that ATSDR’s water modeling work was reliable must be excluded. Def.’s Mot. at 16. Specifically, Defendant argues: “Without any reference to the purpose of the model, however, Dr. Aral’s opinion is unhelpful in determining the exposure issue in this case.” *Id.* Tellingly, Defendant fails to cite any authority for its proposition that Dr. Aral must have experience in epidemiology to deliver a helpful opinion about water modeling. That is because none exists. Dr. Aral disclaims any opinions regarding epidemiology; he is not an epidemiologist—he *is* a recognized authority on water modeling, he has had a long career teaching at a world-class university, he was the head of a research institute at that university, and his assessments of groundwater models at Camp Lejeune are highly relevant to the follow-up epidemiological studies at Camp Lejeune. But he does not need to be an expert in epidemiology or to be aware of the details of the epidemiological studies to qualify as an expert for the water models.

Defendant in essence argues that Dr. Aral must be an expert in epidemiology to deliver a helpful opinion to this Court. Courts around the country have soundly rejected such an argument positing that experts must prove a party’s entire case:

The Court must pause at the outset to acknowledge that no single expert provides a self-sufficient opinion that an identified defect or defects in fact caused the *St. John* collision. This is not dispositive. The case law does not . . . require each expert to present the complete decision tree leading from defect to collision. Reliable expert

testimony need only be relevant, and need not establish every element that the plaintiff must prove, in order to be admissible.

In re Toyota Motor Corp. Unintended Acceleration Mktg., Sales Pracs., & Prods. Liab. Litig., 978 F. Supp. 2d 1053, 1066–67 (C.D. Cal. 2013) (citation omitted); *Kassman v. KPMG LLP*, 416 F. Supp. 3d 252, 272 (S.D.N.Y. 2018) (“Dr. Golberg’s failure to address causation does not make her opinion irrelevant, as no single expert must prove a party’s entire case.”); *Chen-Oster v. Goldman, Sachs & Co.*, 114 F. Supp. 3d 110, 125 (S.D.N.Y. 2015), *objections overruled*, 325 F.R.D. 55 (S.D.N.Y. 2018) (“But it is not necessary for each expert to provide evidence establishing every element of a party’s case”); *Hix v. Zimmer Biomet Holdings, Inc.*, No. 3:18-CV-00437-RCJ-WGC, 2022 WL 946914, at *4 (D. Nev. Mar. 29, 2022) (“The argument fails because Hix is not limited to meeting his burden of proof through a single expert.”); *Nationwide Agribusiness Ins. Co. v. Munters Corp.*, No. 15-CV-1362, 2018 WL 3769846, at *5 (E.D. Wis. Aug. 8, 2018) (“[W]hile I agree with defendants that there is no single expert that ‘connects all the dots,’ because no ‘Grand Unified Theory of causation’ is required, I find that plaintiffs have put forth sufficient evidence to defeat defendants’ motion for summary judgment.”); *Schmucker v. Johnson Controls, Inc.*, No. 3:14-CV-1593 JD, 2019 WL 718553, at *12 (N.D. Ind. Feb. 19, 2019) (“The Plaintiffs offer no reason why a witness must be an expert in every discipline that could possibly bear on a question before offering an opinion on that question, and the Seventh Circuit has expressly rejected such a suggestion.”); *Smith v. Ford Motor Co.*, 215 F.3d 713, 720 (7th Cir. 2000) (“[E]xpert testimony need only be relevant to evaluating a factual matter in the case. That testimony need not relate directly to the ultimate issue that is to be resolved by the trier of fact.”).

Moreover, in Defendant’s zeal to exclude Dr. Aral because his work purportedly did not make reference to the purpose of the water modeling, Defendant overlooks a thorny fact in its argument: Defendant’s own expert hydrogeologist, Dr. Alexandros Spiliotopoulos, whose work in this case is “only to critique the quality of the modeling work and outcome of that modeling,” testified that *he* does not know whether or how ATSDR epidemiologists used the results of the water modeling in their studies. Ex. 2, Dep. Tr. 152:20–22; *id.* 152:5–13. In fact, Dr.

Spiliotopoulos called the epidemiological studies “irrelevant to my opinions on this matter.” *Id.* at 152:24–9. So irrelevant are they, that Dr. Spiliotopoulos did not even read them:

Q. Have you reviewed the published epidemiology studies regarding Camp Lejeune?

A. I have not.

Q. Do you know whether in any of the published epidemiology studies they document that the epidemiologist used the modeling in order to calculate the level and duration of exposure to contaminants?

[objection omitted]

Q. Do you know whether it says that in the published studies?

A. No. I have not read those studies.

...

Q. Do you know if ATSDR epidemiologists had used the mean monthly levels of contaminants predicted by ATSDR's models to calculate the cumulative exposure for any individuals who lived at Camp Lejeune?

[objection omitted]

A. I do not know that. I'm not familiar with the epidemiological studies at Camp Lejeune.

Q. So if the modeling was sent to support the epidemiology studies and the epidemiologists used the modeling to calculate cumulative exposure to individuals, you don't know that; right?

[objection omitted]

A. My work here is only to critique the quality of the modeling work and outcome of that modeling.

Q. So you don't know whether ATSDR's work was used for the purpose of making exposure assessments in individuals? You don't know either way, do you?

[objection omitted]

Q. By the ATSDR epidemiologists. Do you know?

A. This is irrelevant to my opinions on this matter.

...

Q. Did you do any research to determine how ATSDR's modeling studies were used by the epidemiologists?

A. That was not my role in this case.

Id. at 151:13–154:18. Defendant's argument thus falls flat given Dr. Spiliotopoulos's testimony that the purpose of the water modeling was irrelevant to his own opinions on the reliability of that modeling. It cannot be the case that Dr. Aral's lack of familiarity with epidemiological studies is grounds for his exclusion, when the testimony of Defendant's hydrogeologist expert suffers from precisely the same deficiency.

Defendant also erroneously argues: "Reliability for individual exposure is also not included in the models' intended purpose, which was to support epidemiology studies concerned with relative, not absolute, exposure levels." Def.'s Mot. at 17. In fact, use of the mean monthly levels was not limited to estimating relative exposures among groups, as shown in ASTDR's Childhood Birth Defects and Cancer Study and 2017 Public Health Assessment. Plaintiffs incorporate by reference their Opposition on this very subject, which details Plaintiffs' response more fully. *See* Pls.' Opp. To Mot. to Exclude Pls.' Phase 1 Expert Testimony in Supp. of Using ATSDR's Water Models to Determine Exposure Levels for Individual Plaintiffs at 4–7, 16–20.

An assessment of the accuracy, reliability, and correctness of water models depends on hydrogeological factors and principles; it does not depend on how someone else would use the results of the model after it is developed. The models are used to compute the contaminant concentrations at water-supply wells and water treatment plants. An expert like Dr. Aral is qualified to assess how well the model does that. Dr. Aral does not need to have expertise in epidemiological studies to assess the accuracy, reliability, and correctness of the modeling, and the lack of such expertise does not logically disqualify him from using his groundwater and modeling expertise to assess the development and accuracy of the ATSDR groundwater models. It was not his job to assess whether these models supported individual exposure levels; that responsibility falls to other plaintiff experts.

Likewise, an epidemiologist would not have the training or expertise to assess whether hydrogeological data were collected properly or sufficiently, nor whether numerical methods used in solving the equations governing groundwater flow or transport were appropriate and sufficiently accurate. And an expert epidemiologist should not be excluded from testifying about the epidemiological studies because they did not have expertise in groundwater methods, models, and studies.

Additionally, Defendant argues that “it does not matter whether science and engineering could do any better than the ATSDR’s water modelers did because relevance is independent of scientific validity.” Def.’s Mot. at 16. But Defendant again misses the mark: *Daubert* does not require the use of the “best” modeling methodology or data; rather, the choice of methodology or data must be based on *good grounds, based on what is known*. See *Hartle v. FirstEnergy Generation Corp.*, 7 F. Supp. 3d 510, 515, 522–23, 525 (W.D. Pa. 2014) (allowing modeler to testify because he had good ground for selecting and applying the model and considered the model’s limitations). Neither Rule 702 nor *Daubert* hold experts to a standard of “absolute” certainty – *i.e.*, they are not required to be “irrefutable or certainly correct.” See *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 261 (4th Cir. 1999); see also *Daubert*, 509 U.S. at 590 (“Of course, it would be unreasonable to conclude that the subject of scientific testimony must be ‘known’ to a certainty; arguably, there are no certainties in science.”).”

Both in his expert report and in the foreword to Chapter G of the Tawara Terrace ATSDR Report, Dr. Aral wrote:

Historical water contamination data needed for the epidemiological study were limited. To obtain estimates of historical exposure, ATSDR used water-modeling techniques and the process of historical reconstruction of contamination levels at the base. These methods are used to quantify concentrations of contaminants in finished water at the base and to compute the level and duration of human exposure to contaminated drinking water.

Ex. 1, Report at 14. This is a clear statement of the purpose of the water models and is consistent with Dr. Aral’s statement that he was aware that the groundwater models would supply “estimates

of historical exposures” for the epidemiological studies. It is the role of Plaintiff’s other experts to then assess whether the data that Dr. Aral’s models generated is sufficient for causation. Plaintiffs are not limited to meeting their burden of proof through a single expert, and Dr. Aral’s opinions are simply one piece of the larger causation puzzle. Because the Federal Rules of Evidence do not require Dr. Aral to opine on epidemiology as a water modeling expert, Defendant’s argument that his testimony would not be helpful under Rule 702 should be rejected.

V. CONCLUSION

For the foregoing reasons, the PLG respectfully requests the Court to deny Defendant’s Motion to Exclude the Testimony of Mustafa Aral. Dr. Aral’s opinions are grounded in sufficient facts and data based on his decade of work on water modeling for Camp Lejeune. He is not required to offer opinions on what epidemiological studies may require to prove causation, as he is not an epidemiologist. Dr. Aral is a well-respected environmental engineer with decades of experience, and his report and deposition testimony fully support his admission as an expert in that field.

DATED this 4th day of June 2025.

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CERTIFICATE OF SERVICE

I, J. Edward Bell, III, hereby certify that the foregoing document was electronically filed on the Court's CM/ECF system on this date, and that all counsel of record will be served with notice of the said filing via the CM/ECF system.

This the 4th day of June 2025.

/s/ J. Edward Bell, III_____

J. Edward Bell, III